

# PC Based Balancing System



## 7.1.1 PC Data Acquisition

**Clear user guidance**

**Unbalance result for Verification run 5**

- Tolerance complied
- Continue balancing
- Finish balancing

**Result**

**Plane A** [φU] **Plane B** [φU]

**Plane A:**  $v = 0,091 \text{ mm/s}$   $33,3^\circ$

**Plane B:**  $v = 0,036 \text{ mm/s}$   $207,3^\circ$

**Numeric and polar-graphic display**

**Magnitudes of further measurands**

$U = 0,141 \text{ gmm}$	$a = 0,106 \text{ m/s}^2$
$m = 4,485 \text{ mg}$	$v = 0,091 \text{ mm/s}$
$Q = 0,056 \text{ mm/s}$	$x = 0,078 \mu\text{m}$

**Magnitudes of further measurands**

$U = 0,020 \text{ gmm}$	$a = 0,042 \text{ m/s}^2$
$m = 1,067 \text{ mg}$	$v = 0,036 \text{ mm/s}$
$Q = 0,008 \text{ mm/s}$	$x = 0,031 \mu\text{m}$

**Balancing in plane A**

**Reversion** **Settings** **Execution**

**Suggested correction**

Position: 4 (217,2 °)  
Radius: 31,500 mm  
Measure:  
Remove mass 506,20 mg

**Instructions for correction**

\* Only in VM-BAL++



**VibroMetra**  
**VM-BAL**

**Max. number of drillings** 1 **Fixed mass** 180,0  
**Maximum drilling depth** 100 mm **Limit displacement**  
**Drill diameter** 10,0 mm **Material density** 7800 kg/m³  
**Drill point angle** 120 ° **Maximum displacer** 100,0  
**Material density** 7800 kg/m³

**Up to six correction methods\***

Drill radial, Mill radial, Fixed mass radial to center, Fixed radial bord, Mill radial, Fixed mass concentric

**Measuring procedure**

**Monitoring of rotation speed** Actual 2095 1/min **Drehzahlvorschlag / Resonanztest\*** RPM suggestion / resonance check\*

**Suggested rotation speeds**

1/min	2093.2403.2714	1512.1593.1674	432.0.492.7.553.5	783.0.823.5
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**Report function**

Report example, Printer: \MARTIN\HP LaserJet 1200 Series, Setup printer, Print report

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**Notice:** Bilingual software English / German

### Application

- On-the-spot balancing of long and disk-shaped rotors under operating conditions with the aim of vibration reduction

### Properties

- Versatile instrument at an economic price
- PC based balancing system using the IEPE / USB interface M302, one or two IEPE compatible accelerometers and a photoelectric reflex switch
- One or two plane balancing
- Up to six correction methods depending on software version: correction mass, drilling, milling, rotary rings, set screws, list of predefined correction masses
- Automatic operation by rotary speed detection
- Display of measuring results as polargraphic and numerical values
- Simple installation and operation
- User guidance by clear text instructions
- Extremely compact system
- Balancing system including sensors and complete accessories set available as **VM-BAL Kit** in a practical plastic case

**Notice:** A useful tool for checking the balancing success is the vibration analyzer VM-FFT.

## Technical Data

Notice: For two-plane balancing two software license is required.

	VM-BAL++	VM-BAL+	VM-BAL
<b>Balancing methods</b>	One or two plane balancing	One or two plane balancing	One or two plane balancing
<b>Correction methods</b>	Adding / removing mass, radial drilling, milling, rotary rings, sliding blocks, set screws, mass list	Adding mass Removing mass	Adding mass
<b>Pre-defined fixed correction points</b>	3 to 99, angle difference between planes adjustable		none
<b>Balancing aims</b>	Unbalance amount and weight, balance quality to ISO 1940, displacement, velocity and acceleration	Unbalance amount and weight	Unbalance amount and weight
<b>Additional functions</b>	optimum rotation speed, resonance check, defined unbalance, test mass suggestion, combining masses, saving rotor data and balancing sessions	not available	not available
<b>Rotary speed range</b>	100 .. 30 000 min <sup>-1</sup> mit M302 und 6.. 600 000 min <sup>-1</sup> mit M312		
<b>Rotary speed detection</b>	Automatic detection of start, stable operation and stop		
<b>User guidance</b>	Graphical and text instructions for initial, calibration and test run		
<b>Unbalance display</b>	Polargraphic and numerical display		
<b>Correction display</b>	Polar-graphic, numerical display and text instructions		
<b>Polar-graphic</b>	Display of amount and angle of vibration signal, amount and angle of initial unbalance, tolerance circle for good/bad decision, fixed correction points, correction measures		
<b>Required hardware</b>	IEPE / USB interface M302, PC with USB, one or two IEPE compatible accelerometers with mounting magnet for one or two plane balancing, photoelectric reflex switch with tripod or magnetic stand		
<b>Recommended Accelerometer</b>	Isolated industrial accelerometer KS74C.10		

### VM-BAL Kit

